ROCKS and MINERALS

Official Journal of the Rocks and Minerals Association

A Magazine for Mineralogists, Geologists and Collectors

FEBRUARY, 1946

25c

Vol. 21, No. 2 **Whole No. 175**

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WILFRED C. EYES

The Enchanted Publo

BAYFIELD **COLORADO**

ROCKS and MINERALS
PUBLISHED MONTHLY

Edited and Published by
PETER ZODAC

February
1946

CONTENTS FOR FEBRUARY, 1946

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The official Journal of the Rocks and Minerals Association

CHIPS FROM THE QUARRY

ROCKY MOUNTAIN CONVENTION

March 7, 8, 9, 1946
Phoenix, Arizona

The annual convention of the Rocky Mountain Federation of Mineral Societies will be held in Phoenix, Ariz., on March 7, 8, 9, 1946 (Thursday, Friday, Saturday). The Mineralogical Society of Arizona will be host and a large number of collectors and visitors are planning to attend.

Among the Societies which are cooperating with the convention are the Mineralogical Society of New Mexico, Colorado Mineral Society, Grand Junction Mineralogical Society, Canon City Geological Society, and the Mineralogical Society of Utah.

The Federation officers are A. L. Flagg, President, Phoenix, Ariz. (also President of the Mineralogical Society of Arizona); Mrs. Lillian Lockerbie, Vice-President, Salt Lake City, Utah; Humphrey S. Keithley, Secretary-Treasurer, Phoenix, Ariz. (also Secretary of the Mineralogical Society of Arizona).

The program will open at the regular meeting of the host Society on Thurs., March 7th, at the Arizona Museum, Phoenix, Ariz. A business meeting will be held on Friday morning, March 8th; inspection of mineral exhibits in the afternoon; and a dinner in the evening. A field trip will be held on the last day, Sat., March 9th.

The Convention is open to all who are in anyways interested in minerals.

R & M Is First!

Editor R & M:

The enclosed check will pay me out for the current year. Next year will mark my fourth in selling minerals thru your good magazine and I hope to be able to give you some better advertising in the near future. Only last week I received an inquiry for a bubble crystal which I advertised in the January, 1943, issue. And, I am now getting a few orders for books tho I discontinued the ads some months ago. It is nothing unusual to receive orders for items several months after the advertisement on same has appeared. So you can see that, solely upon its merits as an advertising medium, ROCKS AND MINERALS is first with me.

Jno. B. Litsey
Dallas, Texas

Dec. 20, 1945.

Post Office Staff! Are You Guilty?

Editor R & M:

The December issue of ROCKS & MINERALS wandered into my mail box Thursday, Jan. 10th. This is a record as far as I am concerned. Your magazine always arrives a couple of weeks late so I was not duly alarmed.

Could the delay be due to the fact that ROCKS AND MINERALS is so popular the post office staff and its friends read it en route?

Best of luck for 1946!

J. M. DuPont
Chatham, N. J.

Jan .13, 1946.

Who Can Help a Veteran?

Editor R & M:

It would help me considerably if you could furnish me with any information pertaining to Lapidary Schools in the United States or any Lapdary firm that employ apprentices.

G. M. Cloer, Jr.
Vets Hospital
Oteen, N. C.

Jan. 30, 1946

R & M Well Liked!

Editor R & M:

We want you to know that we all like ROCKS AND MINERALS very much. It is not only instructive but awfully interesting. You are doing a splendid job, everybody speaks very highly of you and your work. Your magazine is a "MUST" in any collector's life.

A. Benton Anderson
Hazardville, Conn.

Nov. 18, 1945.

We Are Still Swamped With Work!

During the past ten months or more ROCKS AND MINERALS was so deluged with letters and cards that our work was severely crippled. There is without doubt a tremendous interest in minerals and we are trying to keep up with it. We are succeeding—we are now only two months behind with correspondence!

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Whole No. 175

THE LITTLE COTTONWOOD AREA, UTAH

By RONALD L. IVES

Vice-President, R. & M. A.

Abstract

Geology, mineralogy, and topography of the Little Cottonwood Area, Salt Lake County, Utah, are here described, and the geologic history of the area briefly outlined.

Introduction

Although well known for almost three quarters of a century, adequately mapped, thoroughly described in professional literature, and easily accessible, the Little Cottonwood area of Utah, a famous mineral producer, has not attracted the attention it merits from geologists and mineralogists.

This area, unlike many in Utah, cannot be exhausted in a single visit. So numerous are the mineral deposits, structures, and interesting formations, that even after a dozen or more trips the area will not be "worked out" for the average mineralogist.

Material here presented is condensed from the general geological and mineralogical findings made during a study of Pleistocene glaciations in the area.

Location and Accessibility

The Little Cottonwood Area is a large canyon eroded into the west face of the Wasatch Mountains about 20 miles southeast of Salt Lake City. General location is shown in the index map (Fig. 1).

Access to the area is possible by paved road, via Sandy, Utah, on the Salt Lake City—Provo highway, or by a series of back roads, also paved, along the mountain front. Within the canyon, paved roads extend as far as Alta, at about 8600 feet; and a good gravel road extends three miles farther, to about 9200 feet. Beyond this point, travel by ordinary motor vehicle is inadvisable, although a jeep, equipped with chains, can be taken to the head of the valley. An axe and shovel are desirable equipment if this is attempted.

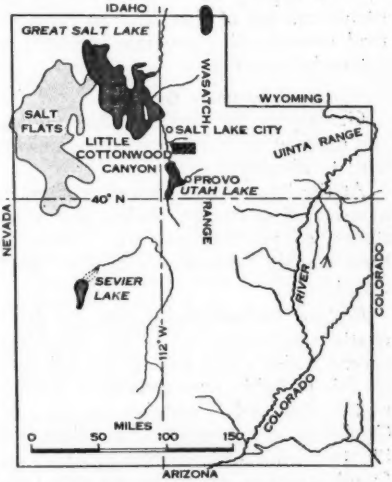


Fig. 1 Index map of Utah, showing location of the Little Cottonwood area.

Salient Literature

Although the Little Cottonwood area is mentioned in more than sixty technical papers, a good general background can be obtained by reading pertinent parts of:

Gilbert, G. K. *Lake Bonneville,* U. S. Geol. Survey Monograph No. 1, 1890.

Atwood, W. W. *Glaciation of the Uinta and Wasatch Mountains,* U. S. Geol. Survey Prof. Paper 61, 1909.

Calkins, F. C., and Butler, B. S. *Geology and Ore Deposits of the Cottonwood—American Fork Area,* Utah, U. S.

Geol. Survey Prof. Paper 201, 1943.

All of the above papers are, because of their intrinsic merit, "required reading" for those interested in the geology of northern Utah. Included bibliographies cover the entire subject very adequately.

Maps

The Little Cottonwood area is shown on the old Salt Lake City Quadrangle (inaccurate and now out of print); the Fort Douglas Quadrangle; and the maps included in the reports by Atwood and Calkins and Butler.

Local road information is best secured by local inquiry, as the maps now in existence are out of date, and an extensive road reconstruction program is shortly to get under way.(1)

Summary Geology

Geology of the area is quite complex, and many of the formations are somewhat hard to identify.

At the base of the geologic column is a series of quartzites, shales, and sandstones, of pre-Cambrian age. Some of these contain calcareous streaks of small extent.

Resting unconformably on the basal quartzite is a mass of tillite, containing varved shales. This material is definitely glacial, probably representing an ice age in the very early Cambrian or late pre-Cambrian of greater extent than the Pleistocene ice ages. Similar materials are found at many places in the Salt Lake Basin.(2)

Separated from the tillites by an unconformity is a thick Cambrian sequence, composed of the Tintic quartzite of early Cambrian age, with a conglomeratic member at the base; followed by the Ophir shale, which has a limestone member in the center, possibly representing middle Cambrian; and topped by the Maxfield limestone, of middle and upper Cambrian age.

Atop the Cambrian sequence is an unconformity, separating the Jefferson (?) dolomite, of probable Devonian age, from the lower formations.

Resting unconformably on the Jefferson dolomite is a thick sequence of beds, composed of the Deseret and Madison limestones, of Mississippian age; the Morgan, Weber, and Park City formations, of Pennsylvanian and Permian ages; and the Woodside Shale, Thaynes formation, Ankareh shale, and Nugget Sandstone, all of Triassic age.

The Triassic sequence is terminated by an unconformity. All material resting above is Pleistocene, composed of moraines, talus, landslides, and alluvium.

Structural Geology

Structures in the Little Cottonwood area are extremely complex, consisting of folds, extremely large overthrust faults, normal and reverse faults of smaller dimensions, and intrusions of several ages.

Recent faults, along the mountain front, are still active, and have resulted in considerable displacement in the area during later Pleistocene time. Faulted moraines at the mouth of Little Cottonwood canyon are shown in Fig. 2.

Extensive overthrust faults are present in the Little Cottonwood area, but are so mixed with normal and reverse faults that their best uncomplicated exposures are outside of the area. A carefully-made map of the *major* faults and fault zones has been published by Calkins and Butler (*Op. cit*).

Intrusions in the area are numerous. Just east of the canyon mouth is the Little Cottonwood Stock, composed of quartz monzonite. This material is clearly exposed on the canyon walls, and is notable not only for its whiteness, but for the fact that reflected light from many of its glaciated surfaces is polarized.

About one mile east of the Alta townsite, and extending east for about two miles, is the Alta stock, composed of granodiorite. Pink orthoclase and brilliant

(1) Shelter and supplies are best secured in Salt Lake City or by prearrangement at Alta, as some of the small towns en route refuse service to strangers and soldiers. Gasoline credit cards and travellers checks are not honored in many of the towns between Salt Lake City and Provo.

(2) Full descriptions of this material are found in Calkins and Butler, *Op. cit.*, p. 6; Plate 7, B; 9-10. Discussion of these late pre-Cambrian or very early Cambrian glacial deposits is given in Coleman, A. P., *Ice Ages Recent and Ancient*, New York, 1929, 207-210.

black hornblende crystals are present in this intrusion.

Minerals of the Area

Some 250 minerals have been reported from this area. A large number of ferromagnesian specimens have been recovered from the intrusions, and many, particularly from contact zones and the near vicinity of dikes, are not only "museum pieces" but represent rather scarce variant forms.

Not too uncommon in the area are small masses of tillite, consisting of boulders surrounded by varved shale. A few tillite boulders containing fossils have been reported from the area, but none have been seen by the writer.

From the various contact metamorphic zones can be collected specimens of garnet (probably andradite), black tourmaline, magnetite, hornblende, various micas, mostly brown to yellow biotite, but occasional clear specimens resembling muscovite are found, and some peculiar micas of iridescent green color occur in small pockets near dikes. Poor specimens of chlorite and olivine are not uncommon, as well as a wide variety of quartz masses and crystals and of lime silicates.

Bog iron, some of it retaining the shape of the plant stems around which it was deposited, is plentiful in the filled lake under the old Alta townsite (Fig. 3). It is probable that this is still forming in many of the wetter basins in the valley.

Minerals occurring in vein deposits are somewhat harder to collect, as their usual source is mine dumps. What can be collected at a given time depends not only upon what mines are being worked, but upon the location (mineralogically) of the working faces.

Plentiful in the area are calcite, siderite, magnetite, hematite and limonite. Good specimens of these can be found at almost any time on most of the mine dumps.

Common galena and sphalerite are quite plentiful in the area. Radioactive galena and sphalerite, although not plentiful, are frequently found. One sphalerite specimen, resembling amber in appearance, was not only radioactive, but acted as a "permanent electret"—it held a positive charge for more than a month after it was chipped out of the matrix. This specimen was triboluminescent. Whether there is any relation between triboluminescence and the ability of a substance to become a permanent electret is not certain, but the classical component

Fig. 2 Faulted moraines, of later Pleistocene age, on the south side of the mouth of Little Cottonwood Canyon. Moraines in the background, also faulted, were built by the glaciers that once occupied Dry Cottonwood canyon. As these moraines came very close to the shores of ancient Lake Bonneville, a tentative dating of the lake stages can be derived from glacial correlations.

of permanent electrets—carnuba wax—is also triboluminescent.

"Wheels" of an iron sulfide usually classed as marcasite are found occasionally in this area. Two analyses of this material gave formulas of FeS and Fe_7S_8.

Two specimens of alleged plumbojarosite given the writer by miners in the area were analyzed and found to be something else, as both contained, in addition to the expected lead and iron, zinc, silver, copper and manganese. As the quantities of the various radicals were not the same in the two halves of the samples, it is believed that this material is a mixture of oxidation products, rather than a new mineral.

Present in many of the mines and dumps, although good specimens are rare, are native copper, in thin sheets, some as large as .01" by .3" by .5", with rock grain on the flat surfaces; molybdenite in small masses; argentite; chalcocite; bornite, usually mixed with chalcocite or chalcopyrite; pyrite, sometimes in perfect cubes, with "octahedral" striations on the faces; other iron sulfides, resembling pyrite in general appearance, but having formulas other than FeS_2: mixed sulfides, having a formula apparently $Cu_a Zn_b Pb_c Fe_d S_e$ in which the subscript letters are unknown in value, occur in small mud-colored nodules on several dumps near Alta, and are regarded as a solid solution of sulfides, rather than as a new mineral.

Gooey black masses, reported to be psilomelane, were found in several parts of the area. Analyses showed that these were compounds of manganese, mixed with various other materials from iron to organic matter.

Smithsonite and cerussite, and a whitish mineral containing zinc, lead, and the carbonate radical, are plentiful in the dump of the South Hecla Mine, a few thousand feet southwest of the Alta townsite.

Malachite and azurite can be found on many of the dumps, but no good specimens were found. Some of the copper carbonates were "filled" with silica, a condition not often recognized, but apparently quite common. The silica here is not chemically combined with the copper carbonate, but fills voids and pore spaces in it. A few specimens contain so much silica that it is possible that a spongy silica mass collected copper carbonates in the interstices.

Beautiful specimens of argentite and barite were seen in miners' collections, but no good examples were found in the field.

Thin sections of ore samples from this area contain zircons and spinel. No macro specimens were found in the field, and few reports of them were heard.

A much more extensive list of minerals than the above is given by Butler (in Calkins and Butler, *op. cit.* p. 86-90), and recent discoveries extend this list somewhat.

Collecting In The Cottonwood Area

Field experience indicates that specimens of about half of the minerals listed above can be found by the average collector on any ordinary one-day trip to the area when the ground is snow-free. Good specimens, however, are harder to find, and may take a lot of hunting and digging.

Visitors to the canyon should remember that mining claims are private property, and that locked buildings must not be entered. Most of the mines have no objection to collectors working over the dumps (at their own risk), and taking such specimens as can be carried away. Entry to mines is not permitted ordinarily, although most of the operators, if contacted in writing in advance, will allow responsible groups to visit the workings accompanied by a guide.

Geologic History

The sequence of events in the Little Cottonwood area is quite complex, as is usually the case in a mountainous region with extensive mineralization.

Generalized geologic history of the region can be inferred from the natures of the various sediments present, from the relations of these sediments to the various folds, faults, and intrusions in the area, and from the histories of adjacent areas, so far as they have been worked out.

In later pre-Cambrian time the area was apparently under water, and received sandy deposits, now present as quartzite, sandstone and shale. Toward the end of

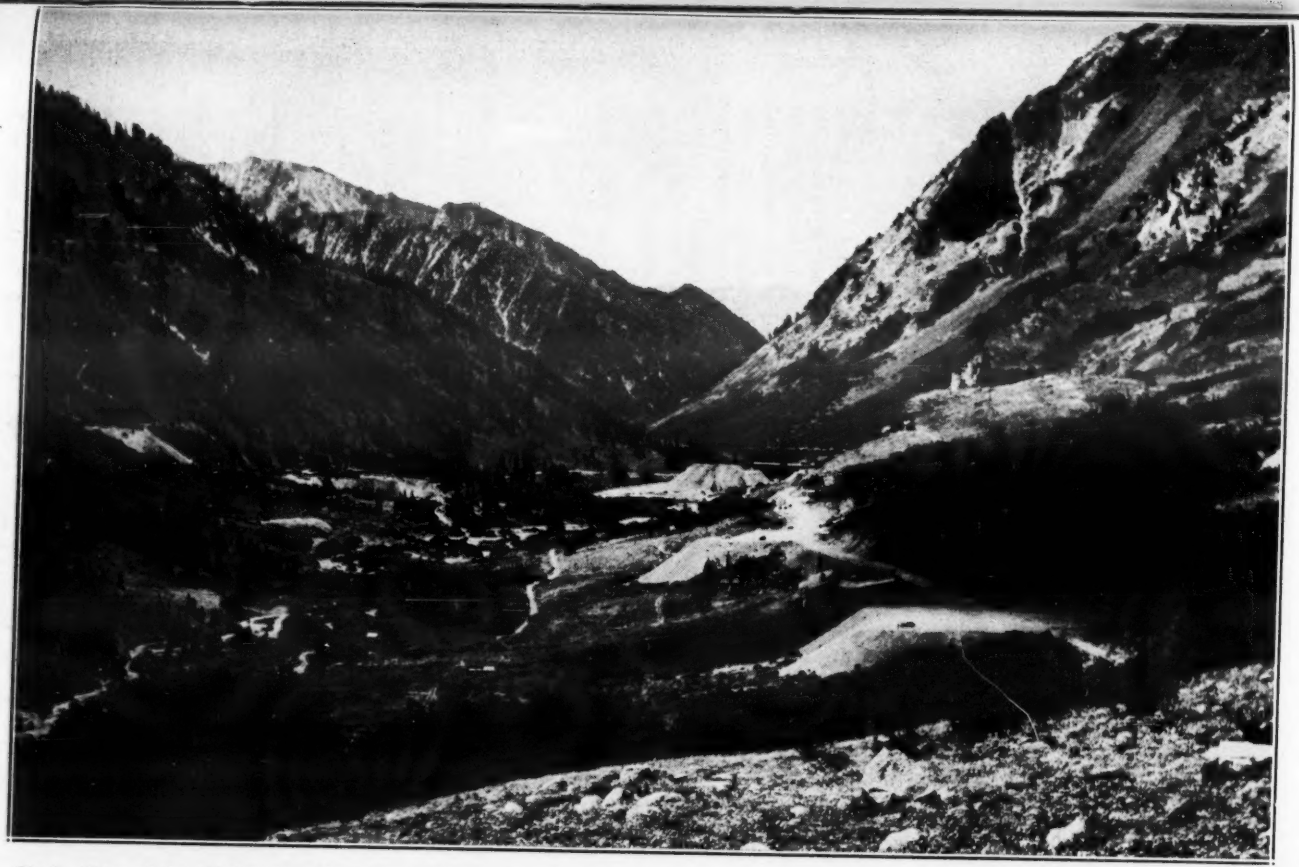


Fig 3 View of the old Alta townsite from above. Foreground rocks arepart of a relatively late Pleistocene moraine. The flat between the mine dumps is a filled lake basin, bounded on the downstream side (west) by a moraine, but separated from it by a narrow bedrock dam. Valley

pre-Cambrian time, this deposition ceased, and was probably replaced by a period of erosion, of unknown duration.

At the very end of the pre-Cambrian, or the beginning of early Cambrian, there was a marked climatic change, resulting in an ice age of great intensity. Deposits still remaining (tillite) suggest that these early Cambrian glaciers were at least as extensive as the continental glaciers of Pleistocene time. Several advances and retreats of the ice front are indicated by the alternation of tillite (morainal deposits) and banded shale (metamorphosed varved clay).

Resting unconformably on the tillite is the basal conglomerate of the Tintic quartzite, definitely of Cambrian age. The Cambrian sequence indicates that just before its deposition there was an elevation of land in the vicinity. First deposits from this high land were conglomerates. As the elevation wore down, the deposits became successively finer until, in middle Cambrian, clear water prevailed, in which limestone was deposited. There was a slight reelevation of the source land during late middle Cambrian, as is indicated by a transition from limestone to shale deposition; then this, too, wore away, and limestones were deposited in late Cambrian, with minor oscillations of level, as is shown by the presence of shales in the middle of the Maxfield limestone.

No deposits of Ordovician or Silurian age remain in the area, indicating that erosion, prior to Devonian time, exceeded whatever deposition there was.

Devonian time is represented by the Jefferson (?) dolomite, containing few fossils, and indicating, by the presence of some shaly layers, minor alterations of the level of adjacent source areas.

From Mississippian time to Lower Triassic, the region was subject to minor variations of level, as is evidenced by the thick sequence of limestones, with interbeddings of sandstone and shale. One major change of level—between Mississippian and Pennsylvanian—is indicated by the unconformity between the Humbug formation (Mississippian) and the Morgan formation (Pennsylvanian). As is usually the case, the Morgan formation, a limestone with sandy and shaly members, has a conglomerate at the base.

Gradual elevation of adjacent lands prior to the Laramie period of mountain building is indicated by the gradual coarsening of the Triassic and Jurassic deposits. There are no deposits in the area from the top of the Nugget sandstone, of Middle (?) Jurassic age, until middle Pleistocene time.

In late Cretaceous and early Tertiary time, the region was compressed; thrown into a series of folds having a trend roughly north-south; and the folds were finally sheared, resulting in a group of thrust faults which extend from Canada southward to about the location of the Utah-Arizona line.

Some time after the major overthrust motion, the Alta and Little Cottonwood stocks (Fig. 4) were intrduded. As these stocks cut across the fault planes, and are not deformed at the crossing, they must be younger than the faulting.

Beginning before the overthrusting was completed, and continuing (although perhaps sporadically) until the present time, was a complex sequence of high-angle faults (see Fig. 2).

During Pleistocene time, the valley west of the Wasatch Range was repeatedly flooded (to a depth exceeding 1,000 feet in at least one instance) (*Lake Bonneville*, see Gilbert, *Op. cit.*) and the whole Wasatch Range was glaciated repeatedly (see Atwood, *Op. cit*).

Today, the area is subjected to erosion, the intensity and type depending on the elevation, and to a gradual elevation, relative to the flatlands to the west, as a result of motion along the Wasatch series of faults.

Conclusions

From this brief summary, which contains about one word for each page of published literature on the area, it can be seen that the Little Cottonwood area contains minerals, rocks, and structures in numbers that will satisfy the most active collector.

Although the published works on the area are of superior quality many unsolved problems in several fields of science remain. It would be hard to spend a week in the area without not

Fig. 4 View down Little Cottonwood Canyon from near Yellow Pine Creek. Not the glacial shape of the valley. In the far distance is the Oquirrh Range, containing the Bingham copper deposits; in the middle distance is the cultivated Jordan Valley, "checkerboarded" by fields. Near the canyon mouth is the white quartz monzonite of the Little Cottonwood stock. Talus and landslide deposits are visible at the lower right.

only finding an unsolved problem, but finding some clue to a possible solution.

Because of the concentration of geologic data in the Little Cottonwood area, it is well worth several visits by anyone interested in mineralogy, geology, geomorphology or meteorology. The area is also ideal, because of its accessibility, for studies of local botany and ornithology.

Chilean Dolomite Deposits Promise Industrial Value

SANTIAGO—Dolomite found in the northern-most Chilean province of Tarapaca, said to be the only deposit on the South American continent, has demonstrated extraordinary qualities in tests made in the laboratories of the University of Chile and of the New York State College of Ceramics.

The reserve is estimated at 24,696,000 tons of crude dolomite and 8,391,600 tons of select material.

Only select dolomite is being exploited at the present time, and it is used for the manufacture of hydraulic cement, and for exteriors of stucco or plaster, replacthe raw material for the manufacture of ing white cement. It also is utilized as Sorel cement, used in mosaics. Other uses which the Chilean dolomite serves are in the manufacture of carbonate of magnesium, in the glass industry, and in fertilizers. In Iquique, dolomite has been used in the government's now maritime building and in the new structure for the School of the Artisans.

Industrial possibilities are seen for the Tarapaca region through future development of the dolomite deposits.

Jefferisite First Found in Pennsylvania

Jefferisite is a dark yellowish-brown to light yellow hydrated mica which was first found in a small serpentine quarry at West Chester, Chester Co., Penn., about 90 years ago. It was named after a prominent mineral collector of his day, W. W. Jefferis, of West Chester, Penn.

A PUZZLE FOR YOU

The following puzzle was originated by a member of the Thomas Rock and Mineral Club (Philadelphia, Penn.) and played at their Christmas party. Can you solve it?

An Excerpt From the Diary of Pvt. 1st Cl. Jones

Saturday, December 15

"The wind is blowing a gale, nasty and damp, but I am well protected by my wool-lined blouse which is a real garment for such weather. Some scientists have just constructed a cyclotron and I am on duty guarding it. They say it will emit electrons and every day they telegraph items of fresh interest about it.

The mess is not very good but we like the Mess Sergeant who is quite Cordial. Lager beer is served but not alcohol. They serve something quite new to me "Broccoli Vinegar"—I tried it but it made me gasp in eloquent dislike "It's vile!"

In addition to the cyclotron, I am responsible for ten minerals which I must not list outright but their names are all found somewhere in these statements."

Can YOU Name the Ten Minerals?

1..... 6.....
2..... 7.....
3..... 8.....
4..... 9.....
5..... 10.....

(Answers on page 87)

THE MINERALS OF THE BLUEBERRY MOUNTAIN QUARRY, WOBURN, MASS.

By JEROME M. EISENBERG

Secretary, Junior Mineral Exchange
77 Victoria Street, Revere 51, Mass.

The purpose of this article is to acquaint the mineral collector with a famous Massachusetts locality and the minerals that it offers at the present time. The article by W. E. Richmond, Jr.[1] on "The Paragenesis of the Minerals from Blueberry Mtn., Woburn" should be refered to as the standard work on this quarry.

During the war, collectors visited the Blueberry Mtn. Quarry more than any other quarry in eastern Massachusetts because of its excellent specimens and accessibility. Because of this activity, at least four new minerals new to the quarry have been found, increasing the total number of species reported to thirty-two.

Location

The quarry is located exactly nine miles N.N.W. from the heart of Boston. It is in the south-east part of Woburn, almost on the border line between Woburn and Winchester. This is the reason specimens from the quarry are sometimes mislabeled "Winchester."

The quarry is easily reached through Cross Street from the bus line through Winchester Highlands from Arlington Center.

Quarry

Permission to enter the quarry may be obtained at the company office at the entrance. A collector should make sure that his presence is known, as a large amount of blasting is done on both levels. The collector should not go too near the quarry walls as there is a great deal of loose, overhanging rock.

Blueberry Mountain rises to a height of 300 feet and the south-east side of the mountain is being worked, forming the main quarry wall. It is estimated that the height of the wall is about 165 feet, and the quarry is about one-third of a mile in length.

Geology

The geology of the quarry has been briefly described by Richmond. He states that the principal rock of the quarry is the pre-Carboniferous Salem granodiorite, which intrudes into the pre-Cambrian Waltham gneiss. The most recent rock is the granite, which lies a little to the north. Aplite and pegmatite dikes intrude into all of these.

Mineralogy

The following is, as far as the writer is able to determine, a complete list of the minerals that are found or have been found at the Blueberry Mtn. Quarry.

ALBITE: White cleavage fragments occur with the orthoclase and microcline. Small transparent crystals (var. Cleavelandite) are found in veins. See *Microcline-orthoclase.*

ALLANITE: Rough coal-black crystals with a glassy luster occur in the feldspar and quartz. They are always surrounded by cracks radiating from the specimen into the surrounding rock, showing evidence of their radio-activity. They range in size from micro-crystals up to crystals two inches or more in length. Mr. A. M. Irving found a beautiful finely terminated crystal about 2½" long by 1" by ½" thick in 1940.[2] Mr. Howard T. Evans, Jr., of M.I.T., found a rough crystal of allanite about 3"x1"x1" last year. In 1944 a large boulder on the second level attracted considerable interest because of some excellent well-terminated allanite crystals and some large masses of titanite that occurred in it.

The specimens are difficult to remove because of the radial cracks, which shatter the specimens. Putting a thick coat of wax on the specimen and the surrounding rock will help hold the allanite crystal together while it is being worked out. The wax can easily be removed after the specimen is safely taken out. Allanite is quite common this year, occurring with quartz and feldspar, on both the bottom level and the second level of the quarry.

ANALCITE: Tiny quartz pseudomorphs occurring as slightly rounded trapezohedrons, forming hollow shells of a delicate

salmon pink color are reported by Richmond.

BABINGTONITE: Woburn is said to be the most abundant source of this mineral, although at times, because of quarrying operations, it is difficult to secure in good specimens. It is found in small brilliant black triclinic crystals in thin seams of calcite, with prehnite, and sometimes tremolite and albite. In size, it ranges from a drusy crystal coating up to separate crystals ¼" in length. Larger crystals are very rare, and less brilliant. Crystals of good size are occasionally found in the calcite, and it is a good idea to etch all calcite coated specimens and calcite veins if they are thought to contain babingtonite. Recently, tiny brilliant groups on parallel quartz crystals have been found on the feldspar.

Washington and Merwin[3], Palache and Gonyer[4], and Richmond[5] have written excellent articles on this rare silicate.

BORNITE: It is occasionally found in the quartz and feldspar in small patches up to ¼", as a coating. They are usually tarnished and show quite a bit of color.

CALCITE: This mineral occurs plentifully both crystallized and massive. Mr. Rudolf C. B. Bartsch found some small yellow crystals of calcite with a greenish fluoresence a few years ago.[2]

CHALCOPYRITE: It is sometimes found as small crystals with pyrite in the feldspar.

CHLORITE: Nearly all of the chlorites found at Woburn are alteration products of biotite and epidote. The chlorite after biotite is brown-black in color, while the chlorite after epidote is a deep green-black. Chlorite after titanite is also found, although it is not as common. The chlorite after biotite and epidote is found up to 4" or more in size.

EPIDOTE: The most common occurence of this mineral is a massive light green coating on the other minerals and rocks. Large dark-green, well crystallized specimens can be found occurring with quartz. In combination with the orthoclase, these make very attractive pieces. Epidote is one of the three most plentiful minerals to be found at the quarry.

GARNET: Richmond reports poorly crystallized, wine-red andradite occurring here. The writer found some tiny, deep red, rough crystals in the feldspar, which are probably garnet.

HEMATITE: It is found as red stains and coatings, up to ⅛" in thickness, on rock.

HEULANDITE: This mineral occurs as thin coatings on the rock, and also in tiny crystals with the calcite and other micromount material.

HORNBLENDE: Small patches of a grey-black color are found in the quartz and feldspar. The variety tremolite is often found in tiny crystals with the micromount material and as a semi-fibrous grey mineral with the calcite.

Blueberry Mountain Quarry, Woburn, Mass.
View showing first and second levels.

HYALITE: Found this past year, it is a new mineral from Woburn. It occurs in small globular masses and has a good fluorescence. It is rare in occurence.

LIMONITE: An alteration product of the hematite, pyrite, and magnetite, it is also found as stains and coatings on the rock.

MAGNETITE: It is commonly found as small patches in the pegmatite. Small rough crystals up to ¼" may also be found in the quartz and feldspar.

MICROCLINE-ORTHOCLASE: Feldspar is one of the "Big Three" minerals at Woburn. It occurs as three species: orthoclase, microcline, and albite. Some of the feldspar can be classified as a perthite, however the majority of it is orthoclase. With the quartz, it forms the pegmatite, occurring in crystals up to a few feet in length. Richmond says that Carlsbad twins are common. The color ranges from pure white and tan to salmon pink and orange. Occurring with milky quartz, and sometimes epidote, the "Big Three" make striking specimens.

"Partially dissolved angular fragments cemented together with calcite and babingtonite" are reported by Bartsch[6]. One specimen of feldspar has a small group of parallel quartz crystals, each about ⅛" in length. Perched on these are tiny feldspar fragments. On top of some of these feldspar fragments and quartz crystals are still tinier quartz crystals, most of them not more than 1/64" in length. Also on the specimen is a small crystal of albite (cleavelandite). Specimens of this type make very interesting micromounts, and they are abundant at Woburn.

MOLYBDENITE: Richmond reports one small crystallized mass found as a pegmatite mineral. The writer found one tiny piece of it in orthoclase. A report on a Boston Mineral Club field trip in 1938 also lists molybdenite as having been found.[7]

PREHNITE: Blueberry Mountain is noted for the fine prehnite specimens that have been found there. The crystals are transparent, tabular, and form small groups on the massive prehnite. Although the crystals are usually very tiny, groups can be found on which they are ⅛" in size. Prehnite is found with the calcite and babingtonite most commonly, however the writer secured some very nice crystallized specimens in aplite in the right-hand quarry wall, associated with etched-out massive prehnite.

PYRITE: This mineral occurs as roughly crystalline masses in the pegmatite. Occasionally a single crystal may be seen near the mass, up to ¼" in size, rarely larger.

QUARTZ: One of the "Big Three", it is found as a milky-white mineral filling

First level (extreme left). Second level on right Blueberry Mountain Quarry, Woburn, Mass.

in the spaces between the feldspar xls in the pegmatite. Large rough crystals of milky quartz can be seen in the pegmatite, however these are usually badly fractured. Transparent crystals, from micromounts up to 1" in size, occur with the calcite and feldspar. Excellent parallel growths are formed by some of these crystals.

SPHALERITE: Richmond describes "small colorless highly lustrous crystals in parallel growths on prehnite crusts".

STILPNOMELANE: This rare mineral was first found last year at Woburn. It occurs as the variety chalcodite, in golden to bronze-colored mica-like flakes, more rarely a greenish-grey, coating the pegmatite minerals. This variety of stilpnomelane also occurs at the Sterling Mine, Antwerp, N. Y., and at Rocky Hill, New Jersey. Since the removal, in May, 1945, of the large rock slide at the highest point of the quarry wall, chalcodite has been increasingly difficult to find. The writer also found a silver-colored chlorite intermixed with the chalcodite on one specimen.

THORITE: This rare thorium silicate occurs with the allanite as tiny reddish-brown crystals. A variety with a high specific gravity, and an orange-yellow color, orangite, occurs as small glassy needle-like crystals in the orthoclase with the allanite. They are both rare in their occurrence.

TITANITE: Woburn is probably the best New England locality for this mineral. It is most commonly found as rough, light to dark brown masses, with easy parting, up to 3" in length, in the pegmatite. At the present time, it seems to be especially abundant on the second level and in the rock slide below it on the first level. Mr. Rama Coomaraswamy found a grey crystalline specimen of titanite on a trip with the writer last year. Small crystals can occasionally be found in cavities.

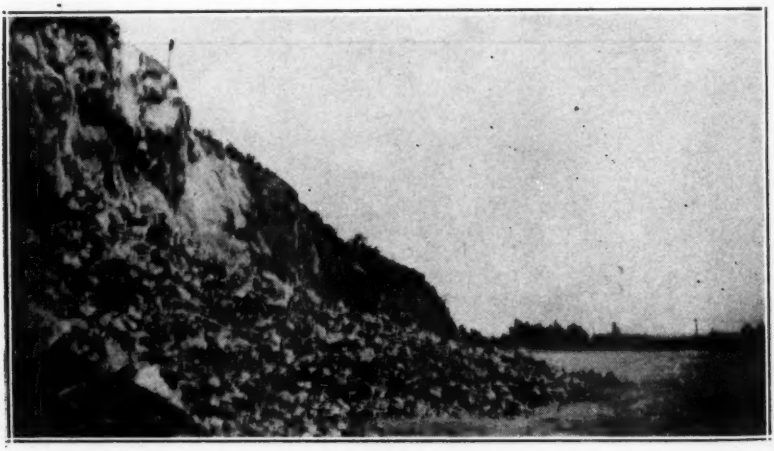
TOURMALINE: A few small black pieces of this mineral have been found. In the field, it can be distinguished from the allanite by the absence of radial cracks and by its brittleness.

ZIRCON: The writer found a tiny red crystal of zircon next to a tiny titanite crystal on orthoclase. Both crystals were about 1/10" in diameter.

OTHER MINERALS: Richmond reports laumontite and stilbite occuring in the same manner as the heulandite.

Acknowledgement

The writer wishes to express his gratitude to Mr. Howard T. Evans, Jr. for his careful reading of the article and for his helpful suggestions; to Dr. Esper



Second Level
Blueberry Mountain Quarry, Woburn, Mass.

Larsen of Harvard University for examining and identifying a number of specimens; and to all the collectors, especially Mr. Gunnar Bjareby, who have helped him in the pursuit of his hobby.

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THE TRIALS AND TRIBULATIONS OF A MINERAL DEALER

By JOHN S. ALBANESE
Newark, N. J.

Few collectors realize the tremendous amount of work and effort a mineral dealer must put into his business if he intends to make it successful. A dealer spends about half his time with correspondence. He has to write catalogs or prepare price lists, and answer inquiries. Often the specimen ordered is sold and he must so notify the customer. He has to label, pack, and ship. To say nothing about identifying doubtful specimens.

Lacking expensive laboratory equipment, the dealer must often enlist the aid of museum curators, state geologists, and others equipped to do the work.

The dealer must go into the market for specimens. Often he makes expensive trips. Sometimes he advertises for certain minerals. Some offers I have received in answer to my advertisements convinced me that all the fools were not confined within asylums. A mid-westerner wanted to sell me a zinc mine. Another wanted to sell me a marble quarry and sent samples of marble along. Still another sent me, express collect, what he thought was a meteorite; it turned out to be a large mass of poor hematite. And still another wanted to sell me his rock garden.

When a dealer buys sight unseen, usually he cannot sell all he buys. I consider myself fortunate if 50% of the material received comes up to my standard of good quality.

Then there are customers which try a dealer's patience. One man wrote he wanted "$1.00 worth of good gem stones —those with the jewel umph in them". Then he added, "Send them C.O.D., parcel post or railway express". Another sent me $2.00 and wanted a complete colelction for his son, age 13. That was to be his birthday gift. He listed all the colors he wanted, right through the spectrum, and, he also wanted gold and silver. All for $2.00!

I have always encouraged youngsters to start a mineral collection. Many a youngster sends me a dime for a specimen. That is fine, although time and stationery and postage use up more than a dime but, I try to create an active interest for mineralogy among children. Often I not only send them the specimen requested but also add a few more of the more common minerals to give them a start. Collectors with duplicates collecting dust should also try to interest children by giving them such specimens and otherwise encouraging them to take up our fascinating hobby.

CANADA'S NEW GOLD BOOM

A gold boom, which has experienced prospectors dreaming of another Klondike, has made Yellowknife, in the Northwest Territories, the magic word in Canada's mining vocabulary, according to Gordon Carroll, author of "Canada's New Gold Boom" which appeared in the January 16th, 1946 issude of The Saturday Evening Post.

"Not only on the Northwest frontier but in the established gold-producing camps of Ontario and Quebec, thousands of men and millions of dollars are bringing new life to a complex business that, prior to a partial shutdown caused by the exigencies of war, had made the Dominion one of the world's greatest sources of mineral wealth," Mr. Carroll writes. "Between now and next summer. . . the boom is slated to receive such impetus that it will set a new high in Canadian history."

The strike that touched off the current boom was made in 1944 by Dr. A. S. Dadson, a geologist who uses science in his hunt for underground treasure. Despite negative reports of other geologists, Dadson reasoned that there must be gold somewhere near West Bay Fault, a mighty geologic break in the earth's surface that runs due north from Yellowknife Bay.

"From the very first test hole put down with a diamond drill, Dadson's deductions clicked," Mr. Carroll says. "Feverish activity came to Yellowknife Camp. Giant (Yellowknife Mine) stock rose from forty cents to eleven dollars. Stocks of properties throughout the district. . . also went soaring.

"But a stock boom does not mean gold production. . . The Yellowknife boom, despite its fame and notoriety, has been confined chiefly to prospecting and drilling. Promoters who still have to prove that they own a worthwhile property offer fifteen dollars a day to lure workers northward."

Transportation is the No. 1 problem of Yellowknife, where the cost to bring in supplies ranges from $80 to $800 a ton, Mr. Carroll asserts. "Until roads and railroads are built northward at federal expense, thereby cutting transportation costs, Yellowknife has little chance to grow at the rate its potential wealth appears to warrant. . . Once heavy machinery and building supplies can be freighted in at economical rates, Yellowknife camp seems destined to boom. All it lacks now is the equipment, plus cheap hydro power from local sites, to project the kind of mining empire that has fluorished in eastern Canada for the last forty years.

"The men in this older, established mining region (eastern Canada) talk not of old times, but of the future of a gold belt that has, so far, been only 10 per cent explored. They cite new methods of prospecting, based on geophysical devices; they describe new production techniques, . . . they relate stories of new discoveries in Ontario and Quebec, . . . But of one thing experienced mining men are certain. Over any protracted period, fortune smiles on only those companies which have enough money to pay for the test drilling and hard work that must be done before a 'mine is made.'"

For those speculating folk who run a fever at the sound of the word gold, Mr. Carroll offers this advice from a Canadian worker:

"There's an all-important fact for stock buyers to remember: the exploration phase of Canadian gold mining never was, and never will be, an invitation to 'investment.' . . . If you want to buy Canadian gold shares, all right. But my advice is never to 'invest' any money that can't honestly be described as venture capital."

Turquoise In Arizona

Very fine gem quality turquoise is produced from several mines near Mineral Park, Mohave County, in northwestern Arizona. The mineral occurs in porphyry cutting schist and gneiss.

The turquoise deposits lie to the east and south of Mineral Park, a little community in central Mohave County.

NOW IT'S ROCKS!

CHAS. A. THOMAS
706 Church St., Royersford, Penn.

Cool, clear water swirled around and eddied, foam flecked, behind a large white boulder. The morning sun shone brightly on this piscatorial setting somewhere on the French Creek—a beautiful and historical trout stream—not quite forty miles from Philadelphia, Penn. The writer cast a floating butcher fly a-quartering up-stream and gently nursed the make-believe insect into the foam. A minute later, battle over, a twelve inch rainbow trout lay quivering beside a brace of trout in the writer's creel.

The above is probably the last fish-yarn this writer may ever recount, for that white boulder intrigued him no end and marked the metamorphosis of a fisherman. That the pure white boulder was out of place was obvious, for the rest of the stream bed seemed to be made up of water-worn country rock, gneiss and schists or shales.

In a few moments the writer had slougher off a chunk of the glistening white boulder with a gunnick* of country rock. On the water-worn convex side of the fragment a regularly patterned chatoyancy glistened in the sun and the freshly fractured concave side presented a sparkly appearance irregularly flecked with shiny black leaf-like scales. Upon further investigation the writer discovered on the submerged portion of the boulder a few walnut-sized clumps of grey-brown nodules. On closer scrutiny these masses opened up like a book. Graphite!

"Well, now, isn't that something?", the writer muttered to himself. But little did he realize that from thence, his creel and fly-rod would gather dust in his attic!

The writer should tell that he always had been a scientific sort—the fuzzy kind. Everything unusual had to be investigated. If the reader will permit; like the inebriate who gazed fuzzily into a rain-puddle one evening and observed, "Thish'll have to be investigated; if thash the moon in 'ere what 'm I doing up here!"

By way of explanation, the writer had been fooling around a bit with fluorescence. Pictures painted with chemicals (organic) and with extracts from fluorescent woods adorned the walls of "his" room. The lowly argon lamp was the u. v. source and was once used to exhibit the work at a hobby-show. The fluorescent art easily captured the greater part of each patron's interest.

So, it was only natural that the writer test the white stone under the argon. A definate soft light blue fluorescence showed under the lamp, and with the switch "off", the material continued to glow softly for quite a few seconds.

"Hm-m; very interesting," thought the angler—excuse me—the writer may now be called a "Rockhound"—for from then on it was search, search and search some more for fluorescent minerals.

Success was scarce! There just were no minerals from the writer's neck of the woods that could be coaxed into action under the argon. It was not long, therefore, before this rockhound added a purple-X u. v. light source to his play toys.

By this time much reading had been done on the subject "minerals" and their luminescence. Two well known mineralogists helped me considerably. One was the expert on luminescence, Dr. Henry Millson, who sent me his pamphlets and a very helpful letter. The other was Philadelphia's favorite mineral collector, Mr. Harold Poole, a little man with a heart twice his size—who lives in Miquon and who generously sent me some starter specimens which would react under the purple-X lamp. These starters are probably the best fluorites I ever hope to own and they are the famed English specimens. It was H. P. who also gave me many old copies of ROCKS AND MINERALS, thereby introducing me to this splendid magazine.

But the writer had the bug—and bad. He wanted to find his own luminous beauties. Naturally, cold winter weather did not deter him, bug or no bug—out he went. So one cold day he stopped in a road-cut—a new one—and among the

* (Up country for "stone").

broken road metal he spied a peculiar black mineral of very light gravity. A peculiar light colored encrusting and cementing material made the specimen look promising. Having no portable lamp then for night prospecting, the writer relied on hunches in selecting possibilities for the lamps.

That night, under the purple-X lamp, this black mineral reacted in a gorgeous green-green; not yellow green; not pale green—but green, a color I had become to suspect as rare in fluorescence either organic or inorganic.

"Hm-m, now what have we got?", the writer mused. But it did not take long for the heat of the purple glass encased photo-flood lamp to offer the answer. Pitch! Delicate resinous fumes and a gentle softening of the "mineral" gave it away. Oh, well! It was pretty anyway!

Surely, though, there must be something in the many quarries nearby. These and new road-cuts were combed. Buckets full of rocks were tested and heaved far and wide with some disgust. At last the writer decided that either he had not hit the right localities or he needed a better source of u. v. The Mineralight people were asked to rush a v-46 portable lamp, as if the age old rocks would suddenly disintegrate and become washed into the sea during a heavy mist.

The lamp came at last. What a revelation! Luckily the writer had saved a few likely specimens from several localities. Firstly, a box full of iron-stone shale concretions from Pottstown, Penn., were tested. Even to this day the writer has yet to find a brighter "tail-light" red encrusting calcium material. Some of the phosphorescence of this same material—a buff fluorescence—is indeed brilliant.

A box of the famous Wheatley Mines material was tested next. This place incidentally is but a scant fifteen minute drive from my home. This material showed brilliant blue-white coatings on ankerite, sphalerite and metallic-schists. Occasional perfectly formed anglesite crystals associated closely with perfect cubes of silver-galena reacted in a fine lemon-yellow color; seeming to give off a u. v. light energy of their own. Small zircons in iron-ore from Sugarman's Quarry, Chester County, Penn., took on a deep orange fluorescence.

Since these first successes, the writer has collected hundreds of luminous specimens at a supposedly non-fluorescent locality—Kibblehouse Quarry—mentioned many times in this magazine as the famour Perkiomenville locality. This material, though not to be compared with the elite of fluorescent minerals, the Franklin, N. J., material, deserves a written article of its own. Strangely enough, this material is very often fluorescent under both 2527 A. U. and 3600-3650 A. U. light source, and in a variety of colors—some beautifully two toned—mostly calcites intermixed with fine stilbites, natrolite and micro-pyrites.

Likewise with Dyer Quarry specimens, Monocacy and near Birdsboro are the localities. Beautiful white broad-beamed flat stilbites stand out against pa'e tan and dark brown calcite rhombs which are very satisfactorily fluorescent and phosphorescent—fluorescent under both lamps 2527 A. U. and 3600-3650 A. U. Some cavities in trap rock contain thousands of micro-rhombs of calcites and when shaken out on a hot-plate in a dark-room present a thermoluminescent spectacle hard to beat.

In early 1945, the writer visited the Boyertown Iron Mine Dumps, at Boyertown, Penn. On testing this material for possible fluorecence one solitary individual reacted in a most brilliant orange imagineable. Further search on the dumps revealed absolutely nothing else even remotely fluorescent. This one brilliant proved to be slag and it did not take the writer long to trace it to an abandoned furnace in a near-by town.

Nothing would do but pay a night visit to these slag piles. If the writer had discovered a two-foot thick vein of solid gold he would not have been more thrilled. The slag material must be hunted down but once a trace is seen on the slag's surface and then fractured, bright yellow-orange-pink-blue chunks fly around like fireworks. The phosphorescence is a pleasing soft reddish-orange and bright blue. This grey heavy slag is criss-crossed

with a regular pattern of crystallized slag, nearly solid fluorescence with some black negative areas.

After this discovery, the writer visited many other old and new slag piles. He earned the name of "Slag collector" among his new mineral friends. With one exception all other slag piles were blanks. This one other slag pile of an abandoned open hearth furnace not far from the writer's home only recently revealed a new find, quite unlike the first discovery. Very recently the writer received a new 986 C. filter for the Mineralight. A new filter, by the way is an event. New brilliancies are discovered in otherwise drab material—so the writer was anxious to try it out on a new locality formerly suspected of containing something fluorescent.

The old open hearth dumps were visited on a cloudy night with my wife and daughter along for morale support. This dump was dangerous at night—huge pits and abrupt ledges. At the very first snap of the lamp things began to happen. The ugly, soot-covered slag upon being fractured, revealed bright light yellow to cream and blue white fluorescent areas on and in cavities. On turning the first few specimens quickly with a wrist motion a brilliant phosphorescence was revealed, giving a hint as to what to expect after an "open" lamp charge (no filter). This was soon done and the afterglow was seen to be about maximum brilliance in a blue to yellow-green color. A wild scramble ensued to fill buckets and baskets with this new find but it soon became apparent that our first spot was the best. Somehow we had hit the best spot which proved to be the oldest of the open hearth furnaces—possibly the first good producers in the U.S.A.—a Potts' project of long ago.

Further search did reveal one other new find in the form of flue dust. It adheres to large fire-brick, is peculiarly formed somewhat like cone-in-cone structure and upon carefully breaking it lengthwise various tints of yellow to brilliant blue in layers show up—under the Mineralight only. The former slag is luminous under all lamps including the common Mazda (Phos.). The heavy flue-dust does not phosphoresce. Frequent furnace chargings deposit sublimations on layers of soot in sequence. Sulfur and possibly an activator impregnate these rare earth sublimations causing fluorescence. A qualitative analysis of these three furnace products would prove very interesting. Suffice to say that rare earths are responsible at this writing.

In the fluorescent cabinet these furnace products present an imposing array of fluorescence. Not natural minerals it's true but beautiful fluorescent specimens, notwithstanding.

FLUORESCENT MINERALS AT KIBBLEHOUSE QUARRY

By C. A. THOMAS

The Kibblehouse Quarry at Perkiomenville, Penn., on the Unami Creek, has recently given up some interesting fluorescent-phosphorescent minerals. Most of them are calcites of nearly every crystal shape imaginable—psuedomorphs.

Beautiful pink calcites, activated by short U. V. only, are superimposed on sparkling tiny brown epidote. Veins of hairy natrolite with pyrites are still being found ,some veins containing white and brown cleavage calcite arranged somewhat like transparent aragonite which it possibly is. This calcite inclusion is invariably pleasantly fluorescent under both long and short u. v., green and tan respectively.

Masses of epidesmine—stilbite with tiny calcites intermixed cause an apricot colored fluorescence under the Mineralight and light green under the purple-X lamp. One unusual natrolite specimen has a fluorescence all its own, slightly brighter than New England manganoapatite. Some hard lumps of clay contain calcite dog-tooths that show very pale blue fluorescence under the Mineralight and very deep blue in long decay afterglow. Brilliant red cementing material (under Mineralight) is fairly plentiful but very fragile. Small bright pieces are the rule.

R. & M. A. Member Had Been Interned by Japs

Editor R & M:

Will you, please renew my subscription to ROCKS AND MINERALS as of January, 1942, and reserve some back issues for me.

I spent three years in a Japanese concentration camp (Santo Tomas, Manila, P. I.). Upon liberation and return to my home in the province, I found my house looted of its entire contents. I had nine bookcases full of books. After a diligent five months' search in the neighborhood, I have been able to recover the numbers of ROCKS AND MINERALS not listed on the attached sheet and three bound volumes.

One of the two books I managed to bring with me to the concentration camp, after having been a refugee behind the American lines in Bataan, was a copy of Butler's "Handbook on Minerals".

During the internment, this was my principal reading matter; as a sporting proposition I told my wife that I felt certain that when I learned this book by heart, we should be liberated. In September, 1944, I passed a critical examination conducted by my wife; and sure enough, on September 21st the first serious bombing of Manila and vicinity occurred and filled our hearts with joy which the Japs' attempt at starving us to death did not diminish.

From September, 1944, until our final liberation in February, 1945, by Major General Chase and his gallant men, the Japs furnished us with an average of 600 to 700 calories of food daily. I believe that 2,000 are usually considered the minimum that a non-working man can survive on. Occasionally, we were able to augment our diet somewhat thru supplies secretly coming over the wall; however, such foodstuff, by the time it reached my hands, had enhanced in price to the extent that I had to pay as much as $120.00 gold (promissory notes) for 2¼ pounds of rice. This amount my wife and I divided into seven portions, one for each day in the week, and believe it or not, a porridge made of rice seasoned with various weeds actually tasted good, at least we thought so at the time.

I expect to be leaving for the States, so please, do not mail ROCKS AND MINERALS until you hear from me upon my arrival.

G. H. Halden
Del Carmen, Philippines
Sept. 27, 1945.

Editor's Note: The author of the above interesting handbook, Dr. G. M. Butler, is Dean of the College of Mines, University of Arizona, and a member of the R. & M. A. Have you his book?

Geysers First Found in Iceland

A geyser is an intermittent hot or boiling spring from which water (or mud) is ejected. In Iceland there are many hot springs (hverars), spread all over the Island, and one of them, the *Geysir*, has given name to all the geysers of the world.

Of the many geysers in Iceland, Stori Geysir (Great Geyser) is the best known, which spouts ton after ton of boiling water 200 feet up in the air every second or third day. This geyser is located in the southern part of the Island and is a popular tourist attraction; it is about 45 miles north from the coast and about 25 miles northwest of Mt. Hekla, Iceland's famous volcano.

Eudialyte First Found In Greenland

Eudialyte is a silicate chiefly of zirconium, iron, and sodium. It is common in the syenites about the Kangerdluarsuk and Tunugdliarfik fiords of the Julianehaab district of southwestern Greenland. It occurs disseminated and in veins in the rock and associated with arfvedsonite and sodalite.

It was first found at Kangerdluarsuk in fine red or brownish-red crystals with sodalite and hornblende in compact white feldspar.

Eudialyte was discovered by Sir Charles Giesecke in 1806 and its name comes from the Greek meaning *easy to dissolve*, alluding to its easy solubility in acids.

COLLECTING ON THE SOUTH SHORE OF LONG ISLAND, N. Y.

By SAMUEL C. BROWN
Stamford, Conn.

The writer had an article in the October, 1945, ROCKS AND MINERALS, on collecting pebbles on the dry bed or partly dry bed of the Ammonoosuc River in Franconia, New Hampshire, near the White Mountains.

Since then it occurred to him that he had done some collecting (not on the dry bed of the broad Atlantic?) but on the sand dunes and beaches of the Hamptons on the south shore of Long Island.

Of course all of these pebbles were more or less water worn, but some were in fair condition. Have picked up several good amethysts of fair color, citrine in good condition and color, many different shades of jasper including the black variety often called "touchstone" of a black satiny appearance, many varieties of milky quartz (from pure opaque translucent to nearly transparent), also small quartz crystals not badly worn so that one could see the angles of the prism, several black tourmalines in fair condition but rather small in size, ironstone or conglomerate geodes (some of these were nearly three inches in diameter), interesting quartz veined and granite pebbles.

Along these beaches, especially after a storm, you may notice numerous black streaks on the sand, this is "Magnetic Sand". With a good horseshoe magnet one may separate the magnetite grains from the quartz and colorful garnet grains.

If one may have the use of a good compound microscope, many very interesting moments may be had examining the sands along the shore of any place on the southern coast of Long Island. The writer has found grains of garnets, amethysts, zircons, magnetite, citrine, beryl, black tourmaline, (these last two minerals were not perfect crystals) and many varieties of quartz, including opalescent, milky, smoky, morion (black), and transparent. In one small pile of sand I noted ten different varieties of minerals.

Jeffersonite First Found in New Jersey

Jeffersonite is a variety of pyroxene and is a common mineral in the zinc mines at Franklin, N. J. Its color is dark olive-green to brown but when weathered it may vary from gray to chocolate-brown to black.

Very fine crystals of jeffersonite, embedded in limestone, have been found at Franklin and neighboring Sterling Hill to enrich museum and private collections.

The mineral was first found at the Sterling Hill zinc mine over 100 years ago and was named for Thomas Jefferson (the third president of the United States) by Lardner Vanuxem and W. H. Keating (Observations upon some of the minerals discovered at Franklin, Sussex Co., N. J., Acad. Nat. Sci., Phila. Jour. Vol. 4, pp. 3-11, 1824).

Kola Peninsula Noted for Minerals

One of the great areas of Russia where interesting minerals may be found is the Kola Peninsula. This is a huge bleak, barren, badly dissected region covered with forests and swamps, with few roads, and where snow starts to fall early—in August.

In the central part of the peninsula occur many outcrops of nephelite-syenite and it is these rocks which produce the minerals, many of which are rare. Among the rare minerals are calcioancylite, eudialyte, foshallasite, hibinite, lamprophyllite, loparite, lovchorrite, murmanite, perovskite, ramsavite, rinkolite, schizolite, taeniolite, ussingite, vudyavrite, wohlerite, and yuksporite.

Almost all of Kola Peninsula is north of the Arctic Circle; the White Sea borders it on the south and east.

"ME AND PA"—TWO OLD ROCKHOUNDS

Dear Editor:

Since last writing you Pa had one spasm that I believe worth reporting. Because he made such a fuss about it I considered maybe it might mean something to other rockhounds who work up their own specimens.

He spoke up something like this,

"Say, Ma, although I always said one should follow instructions from any book on something they are trying to learn I will now add this". To make it impressive Pa shook a finger at me, with his face all lit up like a well trimmed Christmas tree, then holding that finger in a pose while he looked over his specks to see if I was paying attention and after being satisfied that I had quit reading and was all agog he continued.

"When one begins to learn what it's all about he should not let instructions keep him from experimenting on ideas that creep into his head. Take fer instance the drilling of pendants with these tubes. The book says, "Take a tooth-pick or small sliver of wood and dip into diamond paste and daub a little on spot where you wish to start drilling. Then lower drill onto the paste and press lightly to embed the grains for the cutting in the edge of tube and also try and get some inside to give clearance." Of course this is all as clear as mud to me but Pa seems to think I could not help but understand anything he explains so he continues.

"Now that is all right if you do not have to pay $2.25 per carat and have oodles of time to do your drilling but this idea of mine is so far ahead of those instructions there is no comparison. You see, Ma, I take the container with the diamond-paste in it and hold under the tube in drill chuck and bring tube down into paste with a light slap, or slaps as I do it several times before I start drilling, then I use a tooth-pick to wipe the sides of the tube clear of surplus paste and I am ready to start. Though I have a good charge of dust in tube there is no waste and the drilling is five times as fast as the hit and miss of daubing on the rock without knowing just how much hits the tube."

Just as I finished the forgoing about the tube-drilling Pa rushed into the room with an air of one who had discovered a method of transmuting a common metal into radium in two ton lots. He had been out with one of his rockhound friends and as I had the house to myself for the past few hours I had grasped the opportunity to write the above. Now that he has finally laid down his packages (he had an armful) and seems about ready to inform me, 'Why all the excitement!' I will quote what he has to say.

"Just you wait, Ma, and see what I have in these packages!" I was too wise to try to rush him so I turned my book down to show that I was all attention and after he took his regular position on the couch he let out a well pleased sigh and started,

"You know, Ma, I spoke sometime ago about a fellow advertising in R. & M. who lived 3 miles S. of Watsonville (Calif.) on State Highway No. 1, well, we were over there today and of all the surprises I ever received it was when we entered A. L. Jarvis's' 'place and saw the display he has." Pa then let out another long drawn sigh of pleasure and drew out one of the specimens from the packages he had at his feet. Between his gloating and spluttering about those specimens I recall he mentioned, slabs of Brazilian agate, Texas agate, Oregon nodules, Texas nodules as well as some from New Mexico. To say nothing of the many different opalized wood from Texas and other places. To wind up with I will tell you what Pa grieved about in his own words,

"Gee, Ma, if we only had room to put a few of the wonderful crystallized specimens they have on display over there I would be happy from now on."

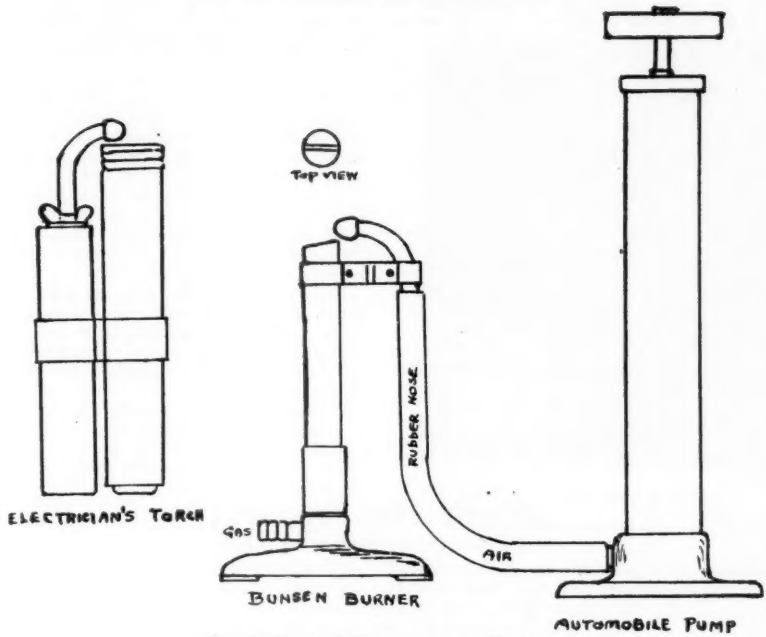
Then he continued, "When you write to ROCKS AND MINERALS again just tell the Editor that he need not hold back on recommending the Jarvis's to all of his friends and subscribers."

As Pa had his say for this time will close, Yours truly,

Me, of the Two Old Rockhounds.

A BLOWPIPE YOU DON'T HAVE TO BLOW

By WILLIAM PFEIFER, JR.
362 Hamilton Place, Hackensack, N. J.



Sketch showing Bunsen burner hook-up

No doubt many mineral collectors have been hesitant in using the blowpipe for the identification of minerals because they felt they could not master the technic required to use it.

The accompanying sketch shows a blowpipe not requiring any skill to use.

Buy an electrician's torch at most any hardware store, one that has a curved pipe at the top as shown, remove this pipe and fasten it to a Bunsen burner. The round top of the burner should be squeezed together to form a slot about 1/16" wide. For gas of course you use the house gas, and for air use any automobile pump. Hook up the pump as shown, pull the handle all the way up and release it, and the weight of the handle will force enough air through to operate the blowpipe for about one minute—if not long enough repeat the operation.

Don't miss the fun of identifying your minerals yourself. ROCKS AND MINERALS will sell you 100 for $5.00, all marked for this purpose, to practice on. Of course you will need a book on blowpipe analysis telling you how it's done and what else to buy, and the best book on the subject is Brush-Penfield's *Manual of Determinative Mineralogy* ($3.50); it too can be purchased from ROCKS & MINERALS.

Answers to Puzzle

(Continued from page 74)

1. Galena
2. Realgar
3. Trona
4. Diamond
5. Willemite
6. Graphite
7. Diallage
8. Talc
9. Olivine
10. Spinel

LEON BENJAMIN BAILEY

October 20, 1872—November 15, 1945

Leon Benjamin Bailey, 73, died suddenly on Nov. 15, 1945, following a heart attack, at his home in North Hyde Park, Vt. He was a retired merchant.

Mr. Bailey was born in Johnson, Vt., on Oct. 20, 1872, the son of Leander and Emma (Joy) Bailey. He was a life time resident of North Hyde Park except for a brief time in East Fairfield, Vt.

Mineralogy was Mr. Bailey's life long hobby not for its monetary value but for the privilege of enjoying the beauty of the woods and fields, as he ofttimes said , "He fe!t nearer to the Great Creator". He never carried firearms of any kind even in a dense forest as he believed in the preservation rather than the destruction of animals and birds. He was an ardent mineral collector who enjoyed sharing his specimens and knowledge with others. He donated many fine specimens to promising enthusiasts in an attempt to enlarge the fascinating hobby. Aside from his collecting activities, he donated many hours to church, Masonic, and boy scout activities.

Mr. Bailey was a member of the Rocks and Minerals Association which he joined on Oct. 16, 1926. He thoroughly enjoyed ROCKS AND MINERALS and often remarked, "Mr. Zodac has accomplished what I have always hoped for—a magazine published for the appreciation of the hobby instead of one filled with technical terms and their complications". Just before his death, he sent a specimen for identification to Mr. Zodac whch turned out to be one of the finest crystallized vesuvianites ever found in America. The specimen came from an asbestos mine in Vermont but before more data on its occurrence could be obtained, Mr. Bailey passed away. We are trying to get more data on the mineral's occurrence and then perhaps Mr. Zodac will announce the find in ROCKS AND MINERALS.

Mr. Bailey is survived by several cousins, Frank and Homer Kinney, of Jericho, and Hoyt Kinney, of Underhill, also two nieces, Mrs. Charles Whitney, of Burlington, and Mrs. Alfred Shore, of Bellows Falls—all of Vermont.

He was my close friend and travelling companion for nearly 30 years.

Fred J. Tupper

GEORGE EBEN RENDELL

April 28, 1878—October 14, 1945

George Eben Rendell, of 39 Grant St., Utica, N. Y., a patent attorney, died on Oct. 14, 1945, after an illness of five days, due to a stroke.

Mr. Rendell was born in Devizes, England, on April 28, 1878, and came to America when he was only 6 years of age. He was naturalized in August, 1899, in Oswego County, N. Y.

After graduating from high school and before entering Columbia Law School, he taught school. After graduating from Law School in 1903, his first position was with the law firm in which Vice-President Sherman was a member. Later on, Mr. Rendell, who was of a mechanical turn of mind, became interested in patent work, took it up, and became very successful.

Mr. Rendell became interested in minerals about 15 years ago and at the time of his death had quite a collection, part of which has been sold. He became a member of the Rocks and Minerals Association on Aug. 6, 1936.

Surviving are his widow, Mrs. George E. Rendell, and a daughter, Miss Frances Rendell, a teacher in English in the Utica Free Academy.

LARGE TOURMALINE FOUND AT MESA GRANDE, CALIF.

By ALBERT EVERITT
Escondido, California

Nothing new that I can learn was mined this year in the gem mining section of San Diego County, Calif. We had our usual 10 day fall trip to Mesa Grande tourmaline mines and one of our party, Corp. Elbert McMacken, uncovered in one of the old dumps, one of the largest tourmaline crystals ever found there; it was a 4-colored doubly terminated crystal with colors pink, green, yellow, and brown. It was 1¼" x 4 inches in length, weighed 5½ ounces, and outclassed any I ever found on my various trips to the locality during the past 30 years.

It is a real thrill to shake a screenful of dump material consisting of the various feldspars, micas, quartz, lepidolite and brush off a pencil of tourmaline; many real gem crystals have been found in this way that were lost in mining in the early days.

FREDERICK WATERS HORTON

March 3, 1883—November 24, 1945

Frederick Waters Horton, 62, retired U. S. Bureau of Mines mining engineer, died on Sat., Nov. 24, 1945, in Washington Hospital, Takoma Park, Md., after a long illness.

Mr. Horton was born in Ipswich, Mass., on March 3, 1883, the son of Joseph I. and Caroline Lindbergh Horton.

Graduating from Massachusetts Institute of Technology with the highest honors, before he was 20, he went west that summer with Professor Richards (of M.I.T. and who died last summer at the age of 100) to become associated with the U. S. Geological Survey. He returned to M.I.T. in the fall of that year and taught one year for his Ph.D. degree. Next year he went west again and on to Alaska, for the U. S. Geological Survey. He spent many years in the west and no doubt examined every important gold mine there.

In 1910 he came to Washington, D.C., to join the U. S. Bureau of Mines which was formed in that year. During World War 1 he left the Bureau to become general manager for the Chemical Products Co., of Anacostia.

In 1929 Mr. Horton rejoined the Bureau of Mines and promoted a mineral survey of the United States. He again spent a number of years in the west, examining more gold mines, supervising the mining of uranium and radium ores in Colorado, and being in charge of the Bureau's office in San Francisco in 1934 and 1935. Being a foremost authority on minerals, he had quite a collection of them, but this collection has now been sold.

Mr. Horton was a member of the American Institute of Mining and Metallurgical Engineers, Rocks and Minerals Association, and a charter member of the Mineraloical Society of the District of Columbia.

Surving are his widow, Mrs. Margaret Greeley Horton, and two sons, Everts L. and DeValle R. Horton of Washington.

FREDERICK WATERS HORTON

Photo taken November, 1939 on Casper Mt., Wyo.

Vanadinite First Found In Mexico

Vanadinite, the beautiful chloro-vanadate of lead, was first discovered in 1801, in a lead mine at Zimapan, Hidalgo, Mexico, by Don Andres Manuel Del Rio, professor of mineralogy at the Royal School of Mines in Mexico City.

The element, which is now known as vanadium and which gives the mineral its name, Del Rio called erythronium; for 29 years he and other chemists of his days, thought erythronium was identical with chromium. In 1830, N. G. Sefström, the Swedish scientist, found the same element in some commercial iron ore from Taberg, Sweden, which he called vanadium—after the Scandinavian myth, *Vanadia*—and this name has persisted to this day.

Copper First Metal Mined by White Men In South Africa

The existence of copper in South Africa was known as early as the 17th century and was the first metal mined in the country by white men. One of the richest deposits of copper in South Africa is in Little Namaqualand, on the northwest coast of Cape Colony, about 300 miles north from the city of Cape Town. The most famous of the mines in the district is the O'okiep whose ore body is a great irregular bulging dike, 1,000 feet long and 380 feet wide. Chalcopyrite and bornite are the chief ores but hematite, magnetite, molybdenite, pyrrhotite, and other minerals are also present.

It is said that the great O'okiep deposit was accidently discovered when pieces of ore were noted in a wagon rut.

. . . Club and Society Notes . . .

New York Mineralogical Club

American Museum of Natural History, New York, N. Y., Wednesday, December 19, 1945. Convened: 8:15 P.M. Attendance: 40.

The December meeting of the Club was called to order by the president at 8:15 p.m. The membership committee had no new applications to report but the President submitted the following approved applicants for membership:

Mr. John Albanese
Miss Helen Elias
Mr. Philip Cosminsky
Mr. Henry Alderfee

These were all elected to membership.

The President then appointed the new committees:

Membership: Mr. Walter Kunstler, Chairman; Mr. E. L. Sampter; Miss Sonya Cummings.

Excursion: Mr. Leonard Morgan, Chairman; Mr. Joseph D'Agastino

There were no reports from the standing committees

Mr. Lee read a letter received from Mr. Hoffman, Chairman of the Berman Memorial Laboratory Fund, solicitating donations for this cause. Mr. Ehrmann moved that the Club make a contribution to this fund. The motion was seconded and approved.

Dr. Pough announced an article on the new phosphate mineral, Brazilianite, in the current isue of *The American Mineralogist*. The article was written by him.

Mr. Lee announced that a limited edition of the ROCKHOUNDS AND ARIZONA MINERALS had been published by the Whispering Wind Press, Phoenix, Arizona.

The business of the meeting was declared finished and the President introduced the speaker of the evening, Mr. Clyde Schumacher, Vice-President of the Johns-Manville Co. Mr. Schumacher prefaced his talk with some historical data on the early uses of asbestos and then gave a short resume of the commercial minerals used. He then showed a colored film on the mining and milling of asbestos. There were specimens for the members to examine after the meeting.

Respectfully submitted
Bernadette Marcin, Sec'y

Newark Mineralogical Society

The 237th meeting of the Society was held on Jan. 6, 1946, in the Newark Museum, Newark, N. J. The program consisted of an interesting talk by John S. Albanese whose subject was "The volcanoes of the Hawaiian Islands."

Boston Mineral Club

A regular meeting of the Club was held on Jan. 8, 1946, at the New England Museum of Natural History, Boston, Mass. The speaker for the meeting was Miss Gladys Babson Hannaford, whose subject was diamonds.

Colorado Mineral Society

A regular meeting of the Society was held on Jan. 4, 1946, at the Museum of Natural History, Denver, Colo. C. J. Pease was the speaker and his subject was "Atomic energy and use of uranium."

East Bay Mineral Society

Two meetings of the Society were held during January, 1946. On Jan. 3rd, a round table discussion was held. On Jan. 17th, G. C. Gester, a mining engineer and geologist, was the speaker whose subject was "Saudi-Arabia", illustrated with motion pictures.

The Society meets at the Auditorium, Lincoln School, Oakland, Calif.

New Jersey Mineralogical Society

A regular meeting of the Society was held on Jan. 8, 1946, in the Public Library, Plainfield, N. J. Dr. A. E. Alexander was the speaker and his subject was "The role of the mineralogist in industry"

Queens Mineral Society

A regular meeting of the Queens Mineral Society was held on January 3, 1946, at Richmond Hill, N. Y. Dr. Trautz reported that a series of four talks on the rare earth minerals would be given.

The annual dinner meeting was set for February 14, 1946, at the Y.M.C.A. in Jamaica, N. Y.

Mr. Frank Lewis, the speaker of the evening, discussed the constituents of the rare earth minerals. The members were given the opportunity of examining specimens Mr. Lewis brought.

Ruth Grotheer, Sec'y

Imperial Lapidary Guild

The Imperial Lapidary Guild is active again, taking in new members, and making field trips.

The Guild meets every two weeks at some member's home on a Friday night. Our last meeting was on Jan. 4, 1946. Visitors are always welcome. Information can be had by calling 216-J El Centro. Bring your rocks and let's argue!

L. G. Beleal, Secretary
575 Euclid, El Centro, Cal.

Colorado Springs Mineralogical Society

The annual election of officers for the Colorado Springs Mineralogical Society in November, 1945, closed a progressive year for the retiring officers and society, exemplifying an

excellent example of leadership for the newly elected officers who are J. P. Osborn, President; Robert Wilfley, Vice-President; and Gertrude A. Walcher, Secretary-Treasurer.

E. Mitchell Gunnell of Denver, Colorado, presented a very informative and interesting explanation of fluorescence and demonstrated the use and effects of several different types of lights on various minerals.

Following adjournment, refreshments were served by a very able committee and a display and sale of very choice specimens furnished by Mr. Gunnell and Robert Roots also of Denver, Colorado, added much to the social interest.

The short business session of the December meeting was followed by a very well prepared and presented verbal picture and explanation of "Collecting in the New England States," given by Pfc. Warren Johannson, who methodically described pegmatites, trap rocks, and various formations. He named and described many localities he and his father have had the pleasure of visiting and collecting. Again our appreciation and thanks go to Pfc. Johannson.

A well attended January meeting with a program furnished by one of the enthusiastic members, Timothy Anglund, on the subject, "Pyrite" and "The Octahedron," received undivided attention and interest as the speaker took apart and put together a model octahedron explaining it step by step and showing with drawings, and writing the methods used in marking the faces of the octahedron.

J. P. Osborn, President

Los Angeles Lapidary Society

A regular meeting of the Society was held on Jan. 7, 1946, at the Royal Palms Hotel, Los Angeles, Calif. E. E. Hadley, of Los Angeles County Museum, was the speaker whose subject was "Collecting fossils in Southern California."

Pacific Mineral Society

A dinner meeting was held on Jan. 11, 1946, at the Eleda Restaurant, in Los Angeles, Calif., at which Roy L. Cornell, a member of the Society, addressed the group and his subject was "Knocking around".

Mineralogical Society of Arizona

Two meetings of the Society were held during January, 1946. On Jan. 3rd, S. S. Turner, of the U. S. Geological Survey, was the speaker whose subject was "Arizona's most valuable mineral, Water"

On Jan. 13th, a field trip was held to the Skunk Creek agate-jasper area.

On Jan. 17th, Ben Humphreys was the speaker whose subject was "Eruption of Santa Maria Volcano".

The Society meets at the Arizona Museum, Phoenix, Ariz.

Mineralogical Society of So. Calif.

A regular meeting of the Society was held on Jan. 14, 1946, at the Public Library, Pasadena, Calif. Ralph Merrill was the speaker whose subject was "The minerals of Searles Lake".

Mineralogical Club of Hartford

On Jan. 9, 1946, the Club visited Trinity College in Hartford, Conn., to inspect the museum and especially to view the Caswell collection of Minerals.

Maine Mineralogical and Geological Society

A regular meeting of the Society was held on Jan. 25, 1946, at 119 Exchange St., Portland, Me. The program consisted of two talks, one by Herb Haven, "Diatomaceous earth and its localities in Maine", and the other by Carl Engles, "Diatoms under the microscope and chemical tests for them".

Marquette Geologists Association

A regular meeting of the Association was held on Jan. 5, 1946, at the Academy of Sciences, Chicago, Ill. The program consisted in the showing of five interesting motion films plus Dr. John Ball's "Short lessons in geology".

Rochester Academy of Science (Mineralogical Section)

A regular meeting of the Section was held on Jan. 10, 1946, at the Rochester Museum of Arts and Sciences, Rochester, N. Y. The program consisted of a discussion on the specific gravity of minerals and a talk "Uranium minerals and the atomic bomb" by Charles W. Foster.

Northern California Mineral Society

The annual banquet of the Society was held on Jan. 13, 1946, at Will King Koffee Kup, San Francisco, Calif.

On Jan. 4th, a business meeting was held; on Jan. 11th was the micromount night; and on Jan. 25th, lapidary night.

The Society meets at 422 Belvedere St., San Francisco, Calif.

Gem Stone Collectors of Utah

The first meeting of the Gem Stone Collectors of Utah was held Thursday night, Jan. 10, 1946, in the Salt Lake City and County Building. Officers elected were T. Frank Nelson, President; Jess Abernathy, Vice-President; Ila Nelson, Secretary; and Mose Whitaker, Treasurer. Purpose of the organization is to further the interest in gem cutting and polishing in Utah.

Mrs. Ila Nelson, Secretary
226 E. 27th South
Salt Lake City 5, Utah

Yavapai Gem and Mineral Society

At the December meeting of the Yavapai Gem and Mineral Society, Prescott, Arizona, Dr. Charles A. Anderson, of the U. S. Geological Survey, told the story of the formation of rocks. Beginning with the molten igneous masses deep in the earth, he followed through, describing the processes by which the different varieties finally reach the earth's surface.

Hal Dawson told of his recent trip to the Colorado Desert to one of John Hilton's agate fields. Being the generous kind of rockhound, Hal brought along a large box of the agates and distributed them among the members.

Ida Smith, Secretary
Box 1084, Prescott, Arizona

Texas Mineral Society

Our December meeting was a most interesting one. Mr. Ralph Churchill, who had spent 2½ years in Alaska, gave a description of the territory and locations of mines and minerals in it and he also showed colored slides of streams, mountains and miners panning for gold. Everyone present enjoyed the meeting very much.

The January meeting of our Society was somewhat short of attendance due to bad weather and sickness. But those who came enjoyed viewing a series of colored slides of some outstanding and rare crystal group specimens from several Colorado collectors.

A. O. Phipps, Secretary.

American Gem Society

(NORTHERN OHIO GUILD)

A regular meeting of the Guild was held on Jan. 8, 1946, at Western Reserve University, Cleveland, Ohio. Dr. Henry F. Donner, of the University, was the speaker whose subject was "Garnets".

Wisconsin Geological Society

A regular meeting of the Society was held on Jan. 7, 1946, at the Milwaukee Public Library, Milwaukee, Wisc. The speaker was the first president and founder of the Society, Benedict P. Bagrowski, whose subject was "Minerals".

North Jersey Mineral Society

A regular meeting of the Society was held on Dec. 13, 1945, at the Paterson Museum, Paterson, N. J. George Hauze gave a talk on "The minerals of Maine" with interesting descriptions of mineralized localities of the State.

Mineralogical Society of the Dist. of Columbia

Dr. W. F. Foshag, of the U. S. National Museum, was the speaker at the Jan. 18, 1946, meeting of the Society. His subject was "The first year at Paricutin".

The Society meets at the U. S. National Museum, Washington, D.C.

State Mineral Society of Texas

Officers elected for 1946 are: President, Floyd V. Studer; Vice-President, L. H. Bridwell; and Sec.-Treas., Mrs. Edith Owens, 380 S. 6th St., Honey Grove, Texas.

Attention Secretaries

When preparing reports on your meetings for ROCKS AND MINERALS, please see to it that names of persons, etc., are written clearly; also give dates of meetings held.

What's The Use?

Editor R. & M:

When I read Mr. Hill's entertaining article in December, ROCKS AND MINERALS I was reminded of an incident which happened a short while ago. It demonstrates the folly of showing one's specimens to the average high-grade moron.

One day, I showed a fine fossilized shark's tooth to a number of people. I explained how it had become fossilized. With great care, I told that it was about 300,000,000 years old, and that it was from the Mississippian period or the "age of sharks and sea-lilies".

Here are the reactions of various people: One woman—a sense of humor lurked in the dim glimmerings of her mind—tried to put the tooth in her mouth. Another, in all sincerity, asked, "Has it been sterilized?" Another nodded, too polite to do anything else. Still another, a motherly soul, smiled kindly at my insane ravings.

What's the use? There's only one way out! BANG!!

Leo Sirota
Baltimore, Md.

Jan. 6, 1946.

Sheba, South Africa's Oldest Gold Mine

The phenomenally rich Sheba gold mine, discovered in 1885, is South Africa's oldest gold mine. The gold occurs both in fissure veins and in quartz veins; of interest to collectors, however, is the fact that gold in association with pyrite often occurs as delicate stringers or in well formed crystals.

The Sheba mine is 13 miles northeast of the village of Barberton (in eastern Transvaal) which in turn is 185 miles east of the city of Johannesburg.

Attention Advertisers

Forms for the April issue of ROCKS AND MINERALS will close on March 10th. Please let us have your instructions by that date if you want your ad to appear in the April issue.

The Editor

. . . With Our Dealers . . .

Chas. E. Hill, of Phoenix, Ariz., announces the addition to his stock of some newly mined Arizona gem agates and jaspers.

Gorgeous Nevada sulfur, North Carolina emeralds, and a new fluorescent lamp are featured this month by Ward's Natural Science Est., of Rochester, N. Y.

Attractive rough pendants and cabochons, ready for polishing, may be obtained from Arthur and Lucille Sanger, of Chicago, Ill.

A. J. Alessi, of Lombard, Ill., has another color parade of minerals (black) in this issue. Don't forget to see it!

If you are in need of finished cabochons or blanks of Arizona and Utah woods, agates, etc. —contact Hermosa Gem and Mineral Shop, of Durango, Colo.

Golden wulfenite phantoms in calcite—see The Erskine Collection, of La Jolla, Calif.

A new advertiser is Utility Supply, Inc., of Topeka, Kans., who is featuring lapidary bargains while they last.

The Long Beach Mineral & Lapidary Supply Co., of Long Beach, Calif., has another interesting assortment of lapidary supplies, minerals, and books.

The Keweenaw Agate Shop, of Ahmeek, Mich., presents another series of choice cutting material as agates, serpentine, etc.

New imported cutting material from Mexico is in the stock of Jack Natteford, of North Hollywood, Calif. (note his new address).

Need any Morgan Hill orbicular jasper? Lloyd M. Demrick, of San Francisco, Calif., has it in stock.

Another new advertiser is Futuria Studio, of Miles City, Mont. Look up the ad!

Some more specials are offered collectors and cutters this month by Western Mineral Exchange, of Seattle, Wash. Take advantage of them!

As usual, water clear quartz xls are the leading items in the sales of J. L. Davis and Son, of Hot Springs, Ark.

Diamonds in any quantity—contact E. A. Baust, of Eureka, Calif.

Another selection of fine specimens is featured this month by the Wiener Mineral Co, of Tucson, Ariz.

H. E. Powell Co., of Little Rock, Ark., has some special mineral sets.

Silver State Specimens, of Mina, Nev., are continuing the Blue Ribbon group offerings.

Some outstanding specimens are featured this month by Hatfield Goudey, of Yerington, Nev.

For fine specimens for the museum or advanced collector, contact John S. Albanese, of Newark, N. J.

An unlimited supply of black and green jade is in the stock of a new advertiser, Myrtle Marion, of Lander, Wyo.

Still another new advertiser is Audrey and Garfield Lewis, of Crystal Springs, Ark., whose specialty is quartz crystals.

For colorful cabochon material, see the ad of Mrs. B. F. Nonneman, of Salinas, Calif.

Another dealer featuring polishing material is Roberts & Stevens, of Monterey Park, Calif.

Cpl. Walter H. Printz, of Hanford, Calif., announces that he will reopen shortly the Yaquina Gem Shop, which he had to close when called into the army.

Some fine mineral specimens are advertised by Wyoming Minerals, of Laramie, Wyo.

Old Mexico moonstones—facet quality—will surely intrigue some of our cutters. Oh, yes, O. T. Branson, of Albuquerque, N. Mex, has them in stock.

Some interesting Nevada specimens are featured by another new advertiser, C. A. Halliday, of Battle Mountain, Nev.

Lapidary and equipment supplies are featured this month by Warner & Grieger, of Pasadena, Calif.

Six rare igneous rocks from Magnet Cove, Ark., are offered this month by Lewis B. Pringle, of Little Rock, Ark.

A complete lapidary shop in one small unit —is the caption of the ad of RX Laboratories, of Torrance, Calif., also a new advertiser.

Frederick T. Currier, Jr., of Meredith, N. H., has recently been discharged from the army and as he plans to enter a School of Mines in the fall, he is anxious to decrease his stock of minerals. Send for his list of duplicates.

Opal, rough, cut, or specimen quality, is a specialty of New Mexico Piedras, of Santa Fe., N. Mex.